

WHAT IS CLAIMED IS:

1. A method of crediting a balance of a pre-paid subscriber account in a telecommunication network, comprising:

receiving a voucher transaction by a node of the network, the voucher transaction including a voucher balance and a voucher discount value;

obtaining an account balance and an account discount value of an account associated with the voucher transaction; and

calculating a composite balance and a weighted discount, the weighted discount a function of the voucher balance, the voucher discount value, the account balance, and the account discount value.

2. The method according to claim 1, wherein receiving a voucher transaction further comprises receiving a voucher transaction including an account identifier that specifies the account associated with the voucher transaction.

3. The method according to claim 1, wherein obtaining an account balance further comprises interrogating a subscriber database with an account reference that specifies the account associated with the voucher transaction, the account reference indexing a subscriber record of the subscriber database, the subscriber record maintaining the account balance.

4. The method according to claim 3, wherein calculating a composite balance and a weighted discount further comprises:

calculating the composite balance by summing the account balance and the voucher balance; and

calculating the weighted discount by calculating a first product of the account balance and the account discount value, calculating a second product of the voucher balance and the voucher discount value, calculating a sum of the first product and the second product, and calculating the quotient of the sum and the composite balance.

Amended

5. The method according to claim 4, further comprising:  
writing the composite balance into a balance field of the subscriber record; and  
writing the weighted discount into a discount field of the subscriber record.

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6. A telecommunication network operable to provide pre-paid telecommunication services, comprising:

a node operable to perform switching services between at least two telecommunication devices;

a first database including a subscriber record having an account balance field and an account discount field; and

a second database including a voucher record having a voucher balance field and a voucher discount field, the network operable to receive a voucher transaction including a voucher identifier and a subscriber identifier, the node operable to interrogate the second database with the voucher identifier and obtain a voucher balance and a voucher discount value, the network operable to interrogate the first database and obtain an account balance and an account discount value from the subscriber record, the node operable to calculate a composite balance and a weighted discount, the weighted discount calculated as a function of the voucher balance, the voucher discount value, the account balance, and the account discount value.

7. The network according to claim 6, wherein the composite balance is the sum of the voucher balance and the account balance.

8. The network according to claim 7, wherein the node is operable to write the composite balance into the balance field of the subscriber record and to write the weighted discount into the discount field of the subscriber record.

9. The network according to claim 6, wherein the node is a service control point and the network is a public switched telephone network, the network further comprising a central office interconnected with the service control point.

10. The network according to claim 6, wherein the node is a service control point and the network is a mobile telecommunication system, the network further comprising:

a base station subsystem including a base station controller and a base transceiver station operable to provide a radio-frequency link with a mobile device; and

5 a switching system including a mobile services switching center interconnected with the service control point, the subscriber identifier and the voucher identifier being transmitted from the mobile device to the base station subsystem over the radio-frequency link, the base station subsystem forwarding the subscriber identifier and the voucher identifier to the switching system, the switching system forwarding the subscriber identifier and the voucher identifier to the service control point.

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11. A computer-readable medium having stored thereon a set of instructions to be executed, the set of instructions, when executed by a processor, cause the processor to perform a computer method of:

5           reading a voucher identifier;  
          reading a subscriber identifier;  
          interrogating a first database with the voucher identifier;  
          retrieving a voucher balance and a voucher discount value from the first  
database;  
10           interrogating a second database with the subscriber identifier;  
          retrieving an account balance and an account discount value from the second  
database; and  
          calculating a composite balance and a weighted discount that is a function of  
the account balance, the account discount value, the voucher balance, and the voucher  
15           discount value.

12. The computer readable medium according to claim 11, wherein  
calculating a composite balance comprises summing the account balance and the  
voucher balance.

13. The computer readable medium according to claim 11, wherein  
calculating the weighted discount comprises calculating a first product of the account  
balance and the account discount value, calculating a second product of the voucher  
balance and the voucher discount value, calculating a sum of the first product and the  
25           second product, and calculating a quotient of the sum and the composite balance.

14. The computer readable medium according to claim 11, wherein  
interrogating a second database further comprises indexing a subscriber record with  
the subscriber identifier, the subscriber record including an account balance field and  
an account discount field therein, the account balance and the account discount value  
30           respectively included within the account balance field and the account discount field.

15. The computer readable medium according to claim 14, further comprising a set of instructions that, when executed by the processor, cause the processor to perform the computer method of:

5 writing the composite balance into the account balance field of the subscriber record; and

writing the weighted discount into the account discount field of the subscriber record.

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16. A computer-readable medium having stored thereon a set of instructions to be executed, the set of instructions, when executed by a processor, cause the processor to perform a computer method of:

- 5           reading a subscriber identifier;
- retrieving an account balance and an account discount value of an account record associated with the subscriber identifier;
- initiating a timer upon a call setup attributed to a subscriber having the account assigned thereto; and
- 10          deducting units from the account balance, the units deducted based upon a timed call duration accumulated by the timer, an airtime rate, and the account discount value.

17. The computer-readable medium according to claim 16, wherein

15          deducting units from the account balance further comprises deducting a product of the timed call duration, the airtime rate, and the discount value from the account balance.

18. The computer readable medium according to claim 16, further comprising a set of instructions that, when executed by the processor, cause the

20          processor to perform the computer method of:

- terminating deductions from the balance upon call termination; and
- writing the balance having the units deducted therefrom into the record.

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